

NPDGamma Publication List

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Papers

1997

A. Csoto and B. F. Gibson. Parity conserving gamma asymmetry in n-p radiative capture. Physical Review C **56**, 631 (1997).

R.C. Welsh, J.N. Zerger, K.P. Coulter, T.B. Smith, and T.E. Chupp. A novel approach for a spin-exchange pumped high density ^3He target. In the Proceedings of Polarized Gas Targets and Polarized Beams 7th International Workshop, ed. by R. Holt and M. Miller, (AIP Conference Proceedings no **421**, 1997) p. 431.

1998

W.S. Wilburn and J.D. Bowman. Consistency of parity-violating pion-nucleon couplings extracted from measurements in ^{18}F and ^{133}Cs . Physical Review C **57**, 3425 (1998).

S.I. Penttila, P.P.J. Delheij, M.R. Fitzsimmons, T. Haseyama, G.L. Jones, M.B. Leuschner, V.R. Pomeroy, D.R. Rich, R.A. Robinson, S.J. Seestrom, and W.M. Snow. Advanced Research Capabilities for Neutron Science and Technology: Neutron Polarizers for Neutron Scattering. Los Alamos National Laboratory Report, LA-UR-98-2356 (1998).

1999

W.S. Wilburn, A. Bazhenov, C.S. Blessinger, J.D. Bowman, T.E. Chupp, K.P. Coulter, S.J. Freedman, B.K. Fujikawa, T.R. Gentile, G.L. Greene, G.L. Hansen, G.E. Hogan, S. Ishimoto, G.L. Jones, J.N. Knudson, E. Kolomenski, S.K. Lamoreaux, M.B. Leuschner, A. Masaike, Y. Matsuda, Y. Matsuda, G.L. Morgan, K. Morimoto, C.L. Morris, H. Nann, S.I. Penttila, A. Pirozhkov, V.R. Pomeroy, D.R. Rich, A. Serebrov, E.I. Sharapov, D.A. Smith, T.B. Smith, W.M. Snow, R.C. Welsh, F.E. Wietfeldt, V.W. Yuan, and J. Zerger. Measurement of the Parity Violating Asymmetry A_γ in $\bar{n} + p \rightarrow d + \gamma$. In Proceedings of Application of Accelerators in Research and Industry, ed. J. L. Duggan and I. L. Morgan (AIP Conference Proceedings no **475**, 1999) p. 247.

2000

W.M. Snow, A. Bazhenov, C.S. Blessinger, J.D. Bowman, T.E. Chupp, K.P. Coulter, S.J. Freedman, B.K. Fujikawa, T.R. Gentile, G.L. Greene, G.L. Hansen, G.E. Hogan, S. Ishimoto, G.L. Jones, J.N. Knudson, E. Kolomenski, S.K. Lamoreaux, M.B. Leuschner,

A. Masaike, Y. Masuda, Y. Matsuda, G.L. Morgan, K., Morimoto, C.L. Morris, H. Nann, S.I. Penttila, A. Pirozhkov, V.R. Pomeroy, D.R. Rich, A., Serebrov, E.I. Sharapov, D.A. Smith, T.B. Smith, R.C. Welsh, F.E. Wietfeldt, W.S. Wilburn, V.W. Yuan, and J. Zerger.
Measurement of the Parity Violating Asymmetry A_γ in $\bar{n} + p \rightarrow d + \gamma$.
Nucl. Instrum. Methods A **440**, 729 (2000).

2001

W. M. Snow, C. S. Blessinger, G. Hansen, H. Nann, D. R. Rich, E. I. Sharapov, S. Ishimoto, Y. Masuda, K. Morimoto, J. D. Bowman, G. L. Greene, G. E. Hogan, J. K. Knudson, S. K. Lamoreaux, G. L. Morgan, S. I. Penttila, T. B. Smith, W. S. Wilburn, V. W. Yuan, T. R. Gentile, G. L. Jones, F. E. Wietfeldt, S. J. Freedman, B. K. Fujikawa, S. Page, T. E. Chupp, K. P. Coulter, M. B. Leuschner,
Measurement of the Parity Violating Asymmetry A_γ in $n+p \rightarrow d+\gamma$. In Proceedings of Fundamental Physics with Pulsed Neutron Beams, ed. C. R. Gould, G. L. Greene, F. Plasil, W. M. Snow (World Scientific, Singapore, 2001) p. 203.

J. D. Bowman, G. L. Greene, J. K. Knudson, S. K. Lamoreaux, G. S. Mitchell, G. L. Morgan, S. I. Penttila, W. S. Wilburn, V. W. Yuan, C. S. Blessinger, M. Gericke, G. Hansen, H. Nann, T. B. Smith, W. M. Snow, T. E. Chupp, K. P. Coulter, T. R. Gentile, D. R. Rich, F. E. Wietfeldt, T. Case, S. J. Freedman, B. K. Fujikawa, S. Ishimoto, Y. Masuda, K. Morimoto, G. L. Jones, B. Hersmann, M. B. Leuschner, S. Page, W. D. Ramsay, E. I. Sharapov.

$n+p \rightarrow d+\gamma$; a measurement of weak force between protons and neutrons.

In the Proceedings of the Workshop on Fundamental Neutron Physics at Spallation Neutron Source (FPSNS2001), LA-UR-01-6126 (2001).

2002

D.R. Rich, J.D. Bowman, B.E. Crawford, P.P.J. Delheij, M.A. Espy, T. Haseyama, G.L. Jones, C.D. Keith, J.N. Knudson, M.B. Leuschner, A. Masaike, Y. Masuda, Y. Matsuda, S.I. Penttila, V.R. Pomeroy, D.A. Smith, W.M. Snow, S.L. Stephenson, A.K. Thompson, and V.W. Yuan.

A measurement of the absolute neutron beam polarization produced by an optically-pumped ^3He neutron spin filter.

Phys. Rev. A **481** 154 (2002).

2003

S. I. Penttila, J. D. Bowman, R. D. Carlini, T. Case, T. E. Chupp, K. P. Coulter, S. J. Freedman, T. R. Gentile, M. Gericke, G. L. Greene, B. Hersmann, S. Ishimoto, G. L. Jones, M. B. Leuschner, Y. Masuda, G. S. Mitchell, K. Morimoto, H. Nann, S. Page, W. D. Ramsay, E. I. Sharapov, T. B. Smith, W. M. Snow, W. S. Wilburn, V. W. Yuan,
A measurement of the parity-violating gamma-ray asymmetry in the neutron-proton capture.

In the Proceedings of the 11th International Symposium Capture Gamma-ray Spectroscopy and Related Topics, ed. J. Kvasil, P. Cejnar, and M. Krticka, (World Scientific, Singapore, 2003) p. 604.

Y. Masuda, J. D. Bowman, R. D. Carlini, T. Case, T. E. Chupp, K. P. Coulter, S. J. Freedman, T. R. Gentile, M. Gericke, G. L. Greene, B. Hersmann, T. Ino, S. Ishimoto, G. L. Jones, M. B. Leuschner, G. S. Mitchell, K. Morimoto, S. Muto, H. Nann, S. Page, S. I. Penttila, W. D. Ramsay, E. I. Sharapov, T. B. Smith, W. M. Snow, W. S. Wilburn, V. W. Yuan,

Parity-violating gamma-ray asymmetry in neutron-proton capture,
Nucl. Phys. **A 721** (2003) 485C.

M. Russina, F. Mezei, T. Kozlowski, P. Lewis, S. Penttila, J. Fezi, E. David, G. Messing, The experimental test of the coupled moderator performance at LANSCE. In Proceedings of the 16th meeting of the international collaboration on advanced neutron sources, May 12-15, 2003, Dusseldorf-Neuss, Germany, (2003) p. 667.

W. M. Snow, W. S. Wilburn, J. D. Bowman, M. B. Leuschner, S. I. Penttila, V. R. Pomeroy, D. R. Rich, E. I. Sharapov and V. Yuan,
Progress toward a measurement of the parity violating asymmetry in $n+p \rightarrow d+\gamma$,
Nucl. Instrum. Methods **A 515**, 563 (2003).

2004

P. -N. Seo, J. D. Bowman, M. Gericke, J. Long, G. Mitchell, S. I. Penttila, W. S. Wilburn, A measurement of the FP12 brightness at LANSCE,
Nucl. Instrum. Methods **A 517**, 285 (2004).

G. S. Mitchell, J. D. Bowman, T. E. Chupp, K. P. Coulter, T. Gentile, M. Gericke, M. B. Leuschner, H. Nann, S. Page, S. I. Penttila, T. B. Smith, W. M. Snow, W. S. Wilburn, A measurement of the parity-violating gamma-ray asymmetries in polarized cold neutron capture, Nucl. Instrum. Methods **A 521**, 468 (2004).

W. S. Wilburn, J. D. Bowman, M. T. Gericke, S. I. Penttila,
The NPDGamma low-noise preamplifier, submitted to Nucl. Instrum. Methods (2004).

P.-N. Seo, J. D. Bowman, M. Gericke, R. C. Gillis, G. L. Greene, M. B. Leuschner, J. Long, R. Mahurin, G. S. Mitchell, S. I. Penttila, G. Peralta, E. I. Sharapov, W. S. Wilburn, New pulsed cold neutron beam line for fundamental nuclear physics at LANSCE, In proceedings of the International Conference on Precision Measurements with Slow Neutrons, National Institute of Standards and Technology, Gaithersburg, April 5-7, 2004. p. .

Shelley A. Page, J. D. Bowman, R. D. Carlini, T. Case, T. E. Chupp, K. P. Coulter, M. Dabaghyan, D. Desai, S. J. Freedman, T. R. Gentile, M. Gericke, R. C. Gillis, G. L.

Greene, F. W. Hersman, T. Ino, S. Ishimoto, G. L. Jones, B. Lauss,M. B. Leuschner, B. Losowski, R. Mahurin, Y. Masuda, G. S. Mitchell, H. Nann, S. I. Penttila, W. D. Ramsay, S. Santra, P.-N. Seo, E. I. Sharapov, T. B. Smith, W. M. Snow, W. S. Wilburn, V. Yuan, H. Zhu, Measurement of parity violation in np: the NPDGamma experiment, In proceedings of the International Conference on Precision Measurements with Slow Neutrons, National Institute of Standards and Technology, Gaithersburg, April 5-7, 2004. p. .

M. T. Gericke, J. D. Bowman, R. D. Carlini, T. Case, T. E. Chupp, K. P. Coulter, M. Dabaghyan, D. Desai, S. J. Freedman, T. R. Gentile, M. Gericke, R. C. Gillis, G. L. Greene, F. W. Hersman, T. Ino, S. Ishimoto, G. L. Jones, B. Lauss,M. B. Leuschner, B. Losowski, R. Mahurin, Y. Masuda, G. S. Mitchell, S. Muto, H. Nann, S. A. Page, S. I. Penttila, W. D. Ramsay, S. Santra, P.-N. Seo, E. I. Sharapov, T. B. Smith, W. M. Snow, W. S. Wilburn, V. Yuan, H. Zhu, Commissioning of the NPDGamma detector array: counting statistics in current mode operation and parity violation in the capture of cold neutrons on B_4C and ^{27}Al , In proceedings of the International Conference on Precision Measurements with Slow Neutrons, National Institute of Standards and Technology, Gaithersburg, April 5-7, 2004. p. .

M. T. Gericke, J. D. Bowman, R. C. Gillis, J. Hartfield, T. Ino, Y. Masuda, G. S. Mitchell, S. Muto, S. A. Page, S. I. Penttila, W. D. Ramsay, P.-N. Seo, W. M. Snow, J. Tasson, W. S. Wilburn, A current mode detector array for gamma-ray asymmetry measurements, submitted to Nucl. Instrum. Methods (2004).

Invited Talks

1998

W.S. Wilburn.

Measurement of the parity-violating gamma asymmetry A_γ in $n+p \rightarrow d+\gamma$.

Fifteenth International Conference on the Application of Accelerators in Research and Industry.

S.I. Penttila.

Studies of hadronic weak interaction with low-energy neutrons at LANSCE. Sixth International Seminar on the Interaction of Neutrons with Nuclei. Joint Institute for Nuclear Research, Dubna, Russia.

S.I. Penttila.

An accurate neutron beam polarization measurement with optically-polarized ^3He . Sixth International Seminar on the Interaction of Neutrons with Nuclei. Joint Institute for Nuclear Research, Dubna, Russia.

J.D. Bowman.

Anapole moments of shell model states. Workshop on Parity Violations in Nuclear Systems. Institute for Nuclear Theory, Seattle, WA.

W.M. Snow.

Parity violating gamma asymmetry in $\bar{n} + p \rightarrow d + \gamma$. Workshop on Parity Violations in Nuclear Systems. Institute for Nuclear Theory, Seattle, WA.

W.S. Wilburn.

Constraints on weak meson-nucleon couplings from ^{133}Cs and ^{205}Tl anapole moments and from ^{18}F . Workshop on Parity Violations in Nuclear Systems. Institute for Nuclear Theory, Seattle, WA.

1999

W.M. Snow,

Measurement of the Parity Violating Asymmetry A_γ in $\bar{n} + p \rightarrow d + \gamma$. In ILL Cold Neutron Workshop in 1999.

W.M. Snow,

A measurement of the absolute neutron beam polarization produced by optically-polarized ^3He neutron spin filter.

In ILL Cold Neutron Workshop in 1999.

M. Leuschner,

Npdgamma experiment. The 10th Int. Symposium on Capture Gamma-Ray Spectroscopy and related topics, Santa Fe (1999).

W.S. Wilburn,

Measurement of the Parity Violating Asymmetry A_γ in $\vec{n} + p \rightarrow d + \gamma$. Application of Accelerators in Research and Industry xyz 1999.

2000

2001

W. M. Snow,

Measurement of the Parity Violating Asymmetry A_γ in $n+p \rightarrow d+\gamma$,
The Workshop on Fundamental Physics with Pulsed Neutron Beams, Oak Ridge 2001.

J. D. Bowman,

$n+p \rightarrow d+\gamma$; a measurement of weak force between protons and neutrons".
The Workshop on Fundamental Neutron Physics at Spallation Neutron Source
(FPSNS2001), Oak Ridge, 2001.

2002

D. Bowman,

Invited talk at APS meeting at Albuquerque; Bonner Prize talk.

S. I. Penttila

A measurement of the parity-violating gamma-ray asymmetry in the neutron-proton capture.

The 11th International Symposium Capture Gamma-ray Spectroscopy and Related Topics, Pruhonice, Prague, Czech Republic, September 2-6, 2002.

Y. Masuda

Parity-violating gamma-ray asymmetry in neutron-proton capture,
In PANIC 2002.

2003

2004

S. A. Page

Measurement of parity violation in np: the NPDGamma experiment,
In the International Conference on Precision Measurements with Slow Neutrons,
National Institute of Standards and Technology, Gaithersburg, MD, April 5-7, 2004.

Bill Hersmann,

Measurement of the parity-violating gamma-ray asymmetry in the neutron-proton capture. American Conference on Neutron Scattering, College Park, MD June 6-10, 2004.

Posters

2004

P.-N. Seo,

New pulsed cold neutron beam line for fundamental nuclear physics at LANSCE, The International Conference on Precision Measurements with Slow Neutrons, National Institute of Standards and Technology, Gaithersburg, April 5-7, 2004.

M. T. Gericke,

Commissioning of the NPDGamma detector array: counting statistics in current mode operation and parity violation in the capture of cold neutrons on B_4C and ^{27}Al . The International Conference on Precision Measurements with Slow Neutrons, National Institute of Standards and Technology, Gaithersburg, April 5-7, 2004.

Contributed Talks

1995

T.R. Gentile, A.K. Thompson, and W.M. Snow. Metastability-exchange optical pumping of ^3He for neutron polarizers. Bulletin of the American Physical Society **40**, 1620 (1995).

1997

W.M. Snow, T.C. Black, X. Fei, C.D. Keith, D.R. Rich, Z. Chowdhuri, M. Flamini, T.R. Gentile, A.K. Thompson, M.S. Dewey, G.L. Jones, and F.E. Wietfeldt. Neutron polarizer based on metastability-exchange optical pumping of ^3He . Bulletin of the American Physical Society **42**, 994 (1997).

T.R. Gentile, A.K. Thompson, M.S. Dewey, G.L. Jones, F.E. Wietfeldt, W.M. Snow, T.C. Black, X. Fei, C.D. Keith, D.R. Rich, Z. Chowdhuri, M. Flamini, Compression of polarized ^3He gas. Bulletin of the American Physical Society **42**, 995 (1997).

G.L. Jones, T.R. Gentile, A.K. Thompson, M.S. Dewey, F.E. Wietfeldt, W.M. Snow, T.C. Black, X. Fei, C.D. Keith, D.R. Rich, Z. Chowdhuri, M. Flamini, Spin exchange optical pumping at NIST. Bulletin of the American Physical Society **42**, 995 (1997).

T.R. Gentile, G.L. Jones, A.K. Thompson, X. Fei, C.D. Keith, D.R. Rich, W.M. Snow, and S.I. Penttila. Neutron polarizers based on polarized ^3He . Bulletin of the American Physical Society **42**, 1647 (1997).

D.R. Rich, C.D. Keith, W.M. Snow, J.D. Bowman, S.I. Penttila, D.A. Smith, M.B. Leuschner, V.R. Pomeroy, T. Haseyama, A. Masaike, and G.L. Jones, Accurate absolute measurements of the neutron polarization obtained via transmission through polarized ^3He spin filters at LANSCE. Bulletin of the American Physical Society **42**, 1647 (1997).

W.S. Wilburn, J.D. Bowman, S.I. Penttila, V. Yuan, M.B. Leuschner, V.R. Pomeroy, D.R. Rich, W.M. Snow, and E.I. Sharapov. Low-noise photocathode preamplifiers for measuring A_γ in $\vec{n} + p \rightarrow d + \gamma$. Bulletin of the American Physical Society **42**, 1667 (1997).

1998

C.S. Blessinger and the npdy Collaboration. Parity violation in polarized neutron capture on protons: Target and detector simulations. Bulletin of the American Physical Society **43**, 1108 (1998).

W.M. Snow and the npdy Collaboration. Parity violation in polarized neutron capture on protons: An analysis of systematic effects. Bulletin of the American Physical Society **43**, 1108 (1998).

W.S. Wilburn and the npdy Collaboration. A proposed experiment to measure Asymmetry A_γ in $\vec{n} + p \rightarrow d + \gamma$ at LANSCE. Bulletin of the American Physical Society **43**, 1108 (1998).

D.R. Rich, X. Fei, G.L. Hansen, W.M. Snow, C.D. Keith, T.R. Gentile, G.L. Jones, and A.K. Thompson. Development of a neutron spin filter based on compression of optically pumped ^3He . Bulletin of the American Physical Society **43**, 1543 (1998).

G.L. Jones, M.S. Dewey, T.R. Gentile, A.T. Lee, A.K. Thompson, F.E. Weitfeldt, Z. Chowdhuri, X. Fei, G.L. Hansen, D.R. Rich, W.M. Snow. NIST neutron spin filter based on polarized ^3He . Bulletin of the American Physical Society **43**, 1579 (1998).

T.B. Smith and the npdg Collaboration. A radio frequency neutron spin rotator for the $\vec{n} + p \rightarrow d + \gamma$ experiment at LANSCE. Bulletin of the American Physical Society **43**, 1579 (1998).

1999

T.B. Smith and the npdg Collaboration. A novel radio frequency neutron spin rotator for the npdy experiment. Bulletin of the American Physical Society **44**, 987 (1999).

2000

J.D. Bowman and the NPDGamma Collaboration. The NPDGamma experiment at LANSCE. Bulletin of the American Physical Society **45**, 172 (2000).

T.B. Smith and the npdg Collaboration. A novel radio frequency neutron spin rotator for the npdy experiment. Bulletin of the American Physical Society **45**, 172 (2000).

2001

W.S. Wilburn and the NPDGamma Collaboration. An Experiment to measure A_γ in $n+p \rightarrow d+\gamma$ at LANSCE. Bulletin of the American Physical Society **46**, 70 (2001).

G. Mitchell and the NPDGamma Collaboration. Measurement of the pulsed cold neutron flux for the npdy experiment. Bulletin of the American Physical Society **46**, 70 (2001).

T.B. Smith and the NPDGamma Collaboration. A novel radio frequency neutron spin rotator for the npdy experiment. Bulletin of the American Physical Society **46**, 70 (2001).

W. Snow and the NPDGamma Collaboration. A current mode ion chamber for the $n+p \rightarrow d+\gamma$ experiment. Bulletin of the American Physical Society **46**, 70 (2001).

C. Blessinger and the NPDGamma Collaboration. Measurement of parity violating γ -ray asymmetries of polarized neutron capture in ^{35}Cl and ^{139}La . Bulletin of the American Physical Society **46**, 71 (2001).

2002

G. Mitchell and the NPDGamma Collaboration. Detector alignment for a parity-violating measurement in $n+p \rightarrow d+\gamma$ experiment. Bulletin of the American Physical Society **47**, 97 (2002).

G. Gericke and the NPDGamma Collaboration. Measuring the parity-violating asymmetry in $n+p \rightarrow d+\gamma$. Bulletin of the American Physical Society **47**, 98 (2002).

2003

G. Gericke and the NPDGamma Collaboration. A low noise CsI detector array for the measurement of parity nonconservation in $n+p \rightarrow d+\gamma$. Bulletin of the American Physical Society **47**, 98 (2003).

2004

G. Mitchell and the NPDGamma Collaboration. Measurement of the parity-violating asymmetry in $n+p \rightarrow d+\gamma$. Bulletin of the American Physical Society **48**, xx (2004).

R. Gillis and the NPDGamma Collaboration. Neutron beam monitors. Bulletin of the American Physical Society **48**, xx (2004).